REMARKS

Claims 2, 4, and 8-11 are pending in this application.

103(a) Rejection of Claims 2, 4, and 8-11 over *Ooishi* in view of *Branch et al.*

The Examiner rejected claims 2, 4, and 8-11 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,271,710 to Ooishi ("*Ooishi*") in view of U.S. Patent Application Publication No. 2003/0076179 to Branch et al. ("*Branch et al.*"). Applicants respectfully traverse the rejection for the following reasons.

Claims 2, 4, and 8-11 are allowable over *Ooishi* in view of *Branch et al.* for at least the reason that *Ooishi* and *Branch et al.* fail to disclose each and every element recited in independent claim 8, from which claims 2, 4, and 9-11 depend. For example, *Ooishi* and *Branch et al.* fail to disclose a "**circuit for providing a refresh cycle for a memory device**" comprising, inter alia, a "**frequency generator comprising a comparator and a capacitor**," as recited in claim 8.

Instead, *Ooishi* discloses a temperature dependent circuit for generating current which is varied depending on a temperature (Col. 3, lines 36-39). "Constant current generated by constant current generating circuit 20 is applied to a temperature dependent circuit 21 and a current dividing circuit 23" (Col. 7, lines 63-65). "Current Im divided by current dividing circuit 23 is input to the gate of n channel transistor 246, [and] current It is applied from temperature dependent circuit 21 to a node Z which is the drain of n channel transistor 246" (Col. 9, lines 18-22), as shown in Figure 4 of

Ooishi. A current "extracted from node Z" is "supplied as a gate potential TMH of a transistor for controlling current in an inverter of ring oscillator 30" (Col. 9, lines 21-27).

The Examiner relies upon the "ring oscillator 30" (shown in Figure 3) of *Ooishi* to constitute the "frequency generator" recited in claim 8. The Examiner contends that "figure 4 shows all limitations of the claim except for the detail of the ring oscillator 30. However, Branch et al.'s figure 3a shows a ring oscillator having low Jitter. Therefore, it would have been obvious to one having ordinary skill in the art to [use] Branch et al.'s ring oscillator for Ooshi's oscillator 30 for the purpose of saving power consumption. Thus, the modified Ooshi's figure 4 shows that the frequency generator comprises a comparator and a capacitor." (Office Action, pg. 2, paragraph 4.)

However, *Branch et al.* fails to make up for the deficiencies of *Ooishi* for at least the reason that *Branch et al.* also does not teach or suggest a "**frequency generator comprising a comparator and a capacitor**," as required by claim 8. The "ring oscillator" of *Branch et al.* relied upon by the Examiner does not comprise a "comparator," as required by claim 8. Instead, Figure 3A of *Branch et al.* illustrates a ring oscillator that has three "differential inverting stages" (Figure 3a; pg. 2, paragraphs [0026] and [0028].) A differential inverting stage does not constitute a comparator. Rather, a differential inverting stage is a "NOT" logic gate. In contrast, a comparator is a device that compares two input signals and switches an output to indicate which of the input signals is larger. Thus, the circuit in Figure 4 of *Ooishi*, as modified by the "ring

oscillator" of *Branch et al.*, does not comprise a "frequency generator comprising a comparator and a capacitor," as recited in claim 8.

Thus, since *Ooishi* and *Branch et al.* fail to teach or suggest each and every element of claim 8, claim 8 and claims 2, 4, and 9-11 that depend therefrom are allowable over *Ooishi* in view of *Branch et al.* under 35 U.S.C. § 103(a).

CONCLUSION

In view of the foregoing remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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